

What is claimed is:

1. A lock comprising:

a latch;

a retractor for retracting the latch;

5 an inside handle;

an inside spindle having a first end fixed to the inside handle to turn therewith and a second end, the inside spindle being operably connected to the retractor such that rotation of the inside spindle causes retraction of the latch;

10 a locking bar extending through the inside spindle;

an inside hub for rotatably receiving the second end of the inside spindle;

an outside handle;

15 an outside spindle having a first end and a second end fixed to the outside handle to turn therewith;

an outside hub for rotatably receiving the first end of the outside spindle;

20 a cam received in the first end of the outside spindle, the cam including a first end and a second end, a lug being formed on the first end of the cam and operably connected to the retractor, an elastic element being received in the cam, a peg being mounted in the cam; and

25 a sleeve received in the cam and slidable along a longitudinal direction of the outside spindle, the sleeve including a longitudinal slot having an enlarged section, the peg being received in the longitudinal slot of the sleeve, the sleeve being engaged with the outside spindle to turn therewith while allowing the sleeve to move longitudinally in the cam;

wherein when the locking bar is moved to a locking position, the peg is located in the enlarged section such that the sleeve and the outside spindle turn freely without causing rotation of the cam when the outside spindle is turned.

- 5 2. The lock as claimed in claim 1, with the first end of the outside spindle including a slot in an end face thereof, the slot extending along the longitudinal direction of the outside spindle, the sleeve including an arm extending therefrom, with the arm extending into the slot of the outside spindle and longitudinally slidable along the slot.
- 10 3. The lock as claimed in claim 1, with the outside hub including a restraining recessed portion, with the arm extending into the restraining recessed portion, the restraining recessed portion having two ends for limiting rotational movement of the arm.
- 15 4. The lock as claimed in claim 2, with the first end of the sleeve including a hole, with the locking bar having an end securely engaged in the hole of the sleeve.
- 20 5. The lock as claimed in claim 1, with the cam including an engaging portion, with the outside handle including a cylinder mounted therein, the cylinder including a cylinder bar engaged with the engaging portion of the cam, allowing joint rotation of the cylinder bar and the cam.
- 25 6. The lock as claimed in claim 1, with the outside handle being a lever.
7. The lock as claimed in claim 1, with the outside hub including an outside seat, the outside seat including an outer threading with two diametrically disposed flat surfaces, further including a reinforcing ring and an adjusting sleeve, the reinforcing ring including two positioning posts extending outward therefrom and two diametrically disposed flat sections in an inner periphery delimiting

- a hole thereof, the reinforcing ring being mounted around the outside seat, with the flat sections of the reinforcing ring being in contact with the flat sections of the outside seat, the adjusting sleeve including an inner threading threadedly engaged with the outer threading of the outside seat, an outside
5 rose being mounted to the outside handle, the adjusting sleeve being securely engaged with the outside rose, wherein rotation of the outside rose causes longitudinal movement of the adjusting sleeve and the outside rose until the retractor is located in a center of a thickness of a door to which the lock is mounted.
- 10 8. The lock as claimed in claim 7, with each said positioning post of the reinforcing ring having a screw hole, further including an inside rose liner mounted around the inside hub, the inside rose liner including at least one pair of positioning holes, with two screws extending through one of said at least one pair of positioning holes of the inside rose liner into the screw holes
15 of the positioning posts of the reinforcing ring.
9. The lock as claimed in claim 8, with the inside rose liner including a threaded inner periphery, with the inside hub including an outer threading threadedly engaged with the threaded inner periphery of the inside rose liner.
- 20 10. The lock as claimed in claim 7, with the outside rose including a central stepped portion having a central through-hole, with the adjusting sleeve having an end securely engaged with the central stepped portion of the outside rose.